



FIG. 1A

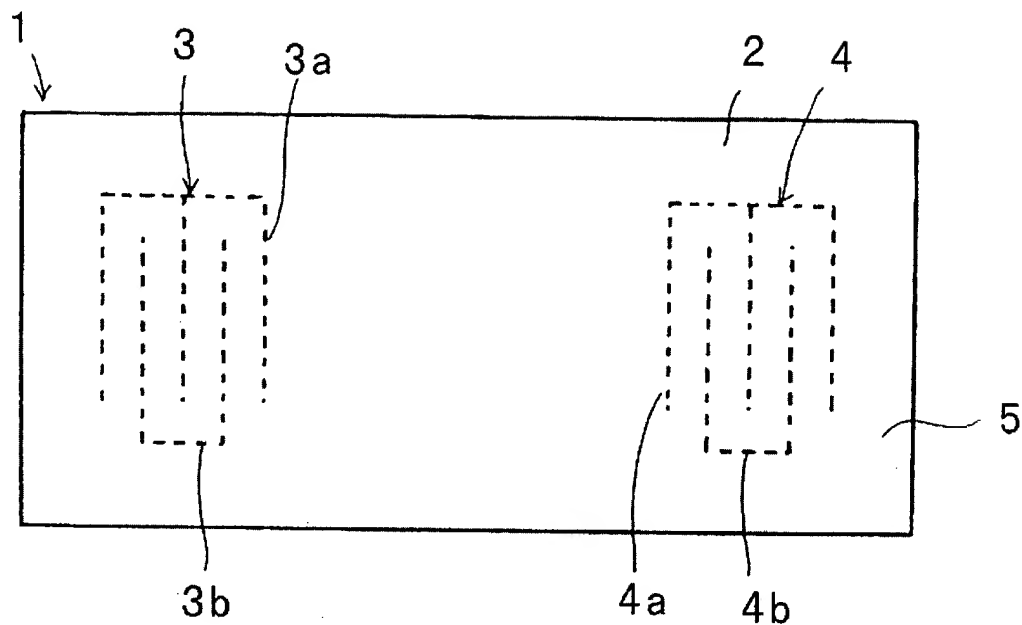


FIG. 1B

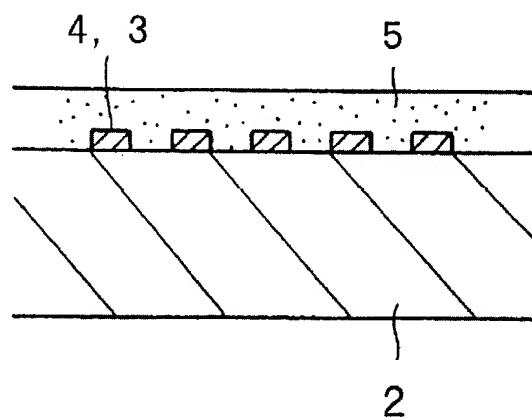


FIG. 2

Electromechanical coupling coefficient  $K^2$  of Rayleigh wave when ZnO thin film with Euler angles  $(0^\circ, 0^\circ, 0^\circ)$  is formed on quartz substrate with Euler angles  $(0^\circ, 119.75^\circ, 35^\circ)$

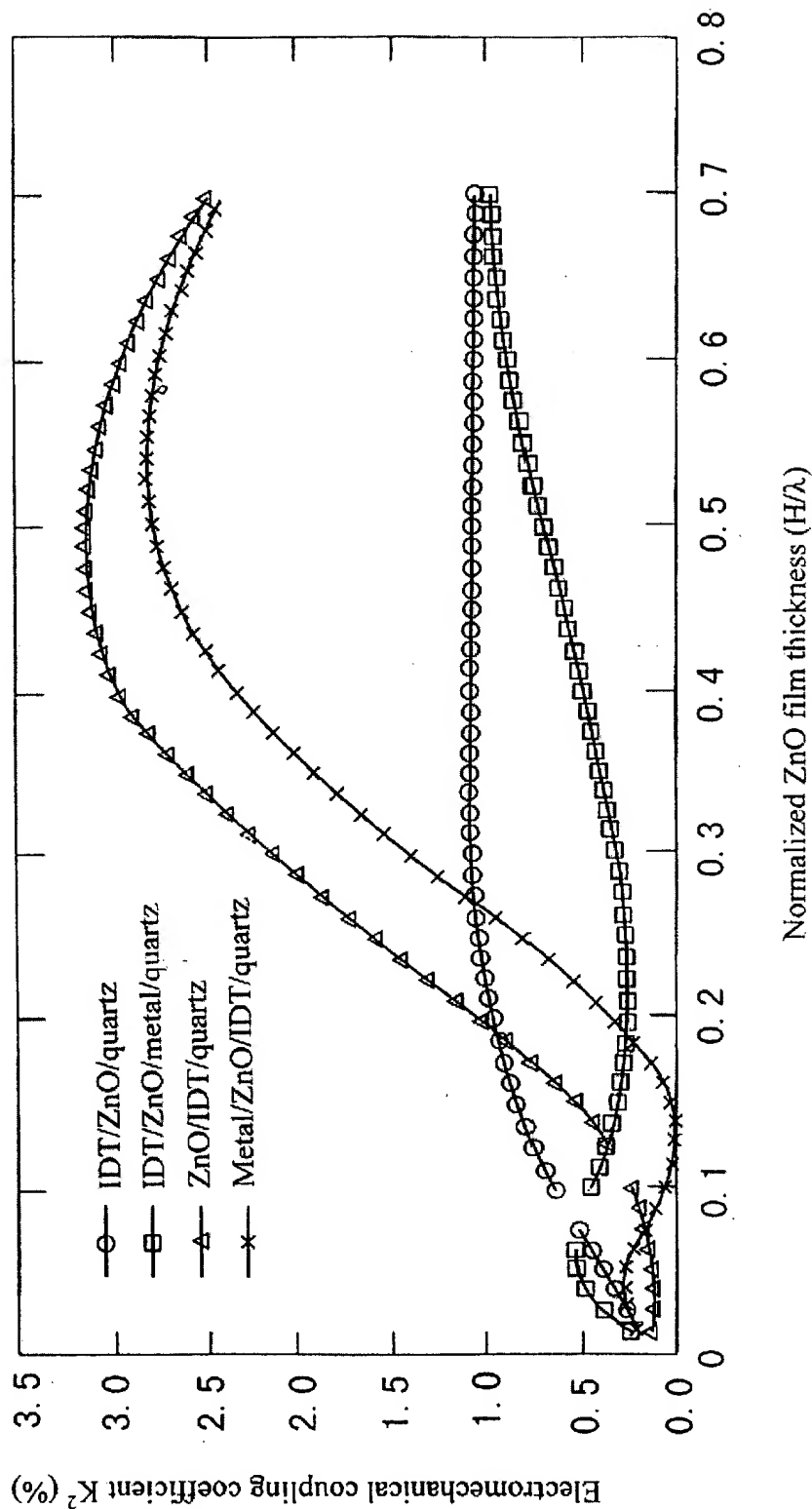




FIG. 3

Electromechanical coupling coefficient  $K^2$  of Rayleigh wave when ZnO thin film with Euler angles  $(0^\circ, 180^\circ, 0^\circ)$  is formed on quartz substrate with Euler angles  $(0^\circ, 119.75^\circ, 35^\circ)$

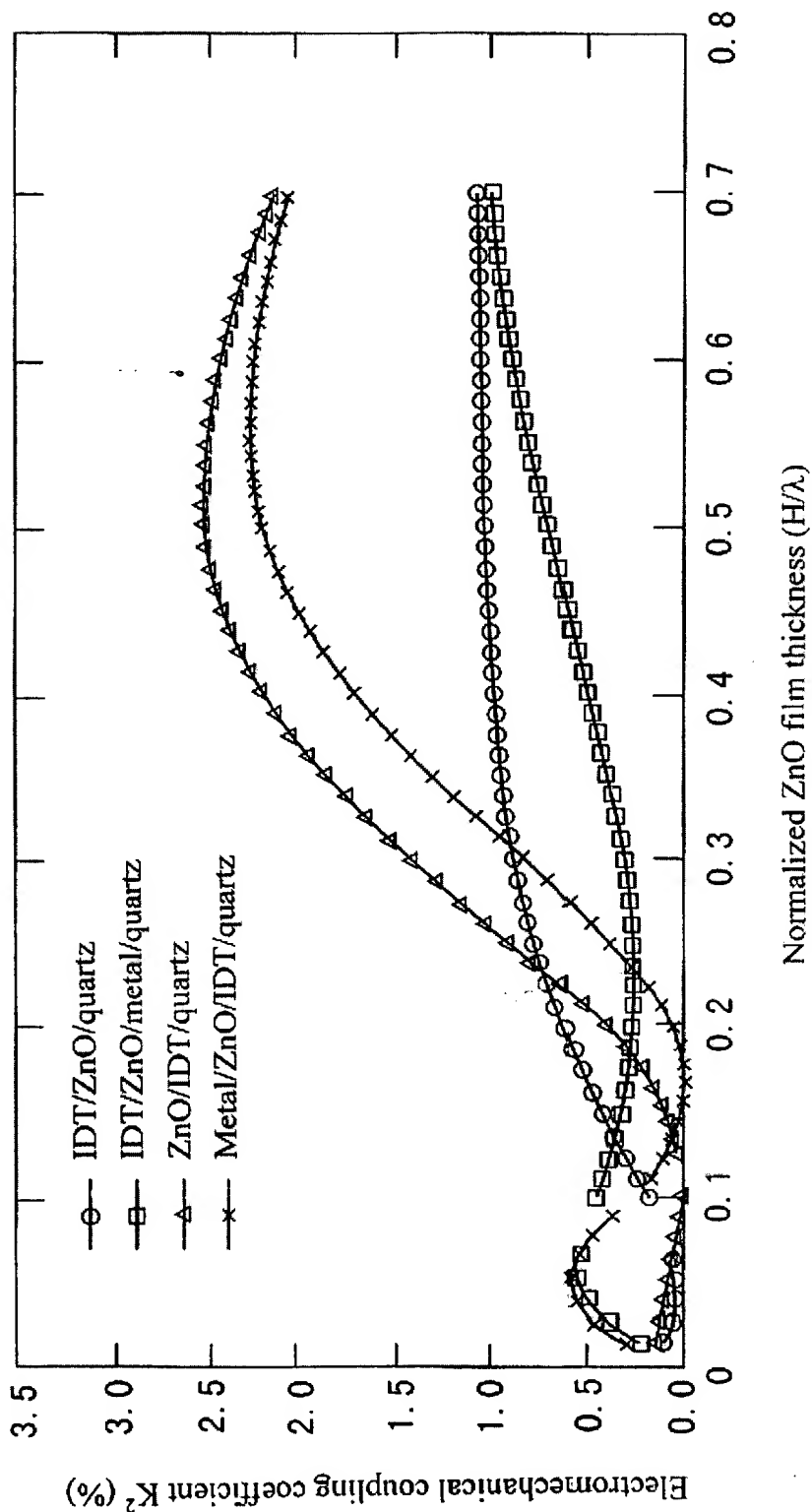




FIG. 4

Electromechanical coupling coefficient  $K^2$  of Rayleigh wave when ZnO thin film with Euler angles  $(0^\circ, 0^\circ, 0^\circ)$  is formed on quartz substrate with Euler angles  $(0^\circ, 119.75^\circ, 35^\circ)$

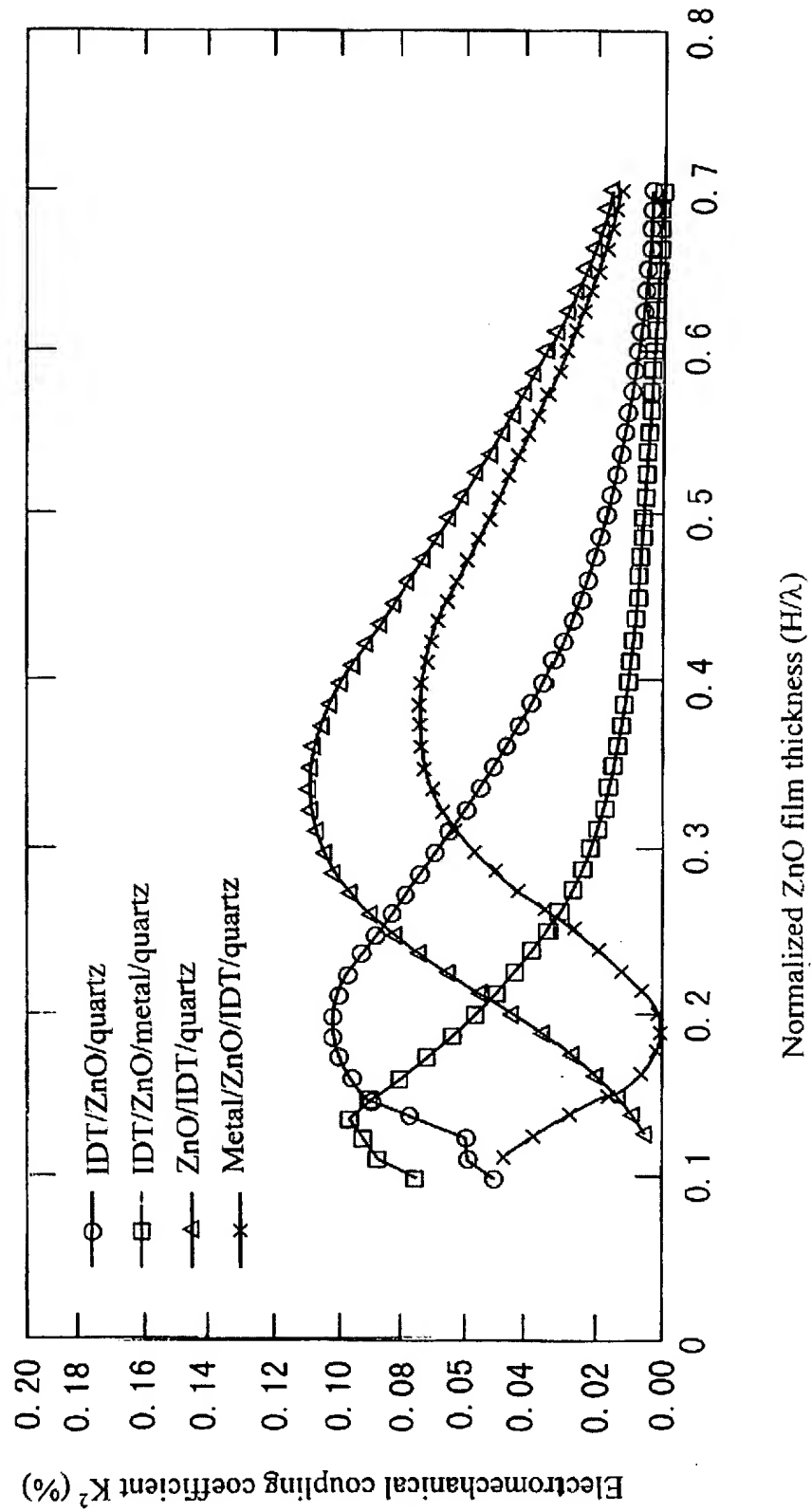


FIG. 5

Electromechanical coupling coefficient  $K^2$  of Rayleigh wave when ZnO thin film with Euler angles ( $0^\circ$ ,  $180^\circ$ ,  $0^\circ$ ) is formed on quartz substrate with Euler angles ( $0^\circ$ ,  $119.75^\circ$ ,  $35^\circ$ )

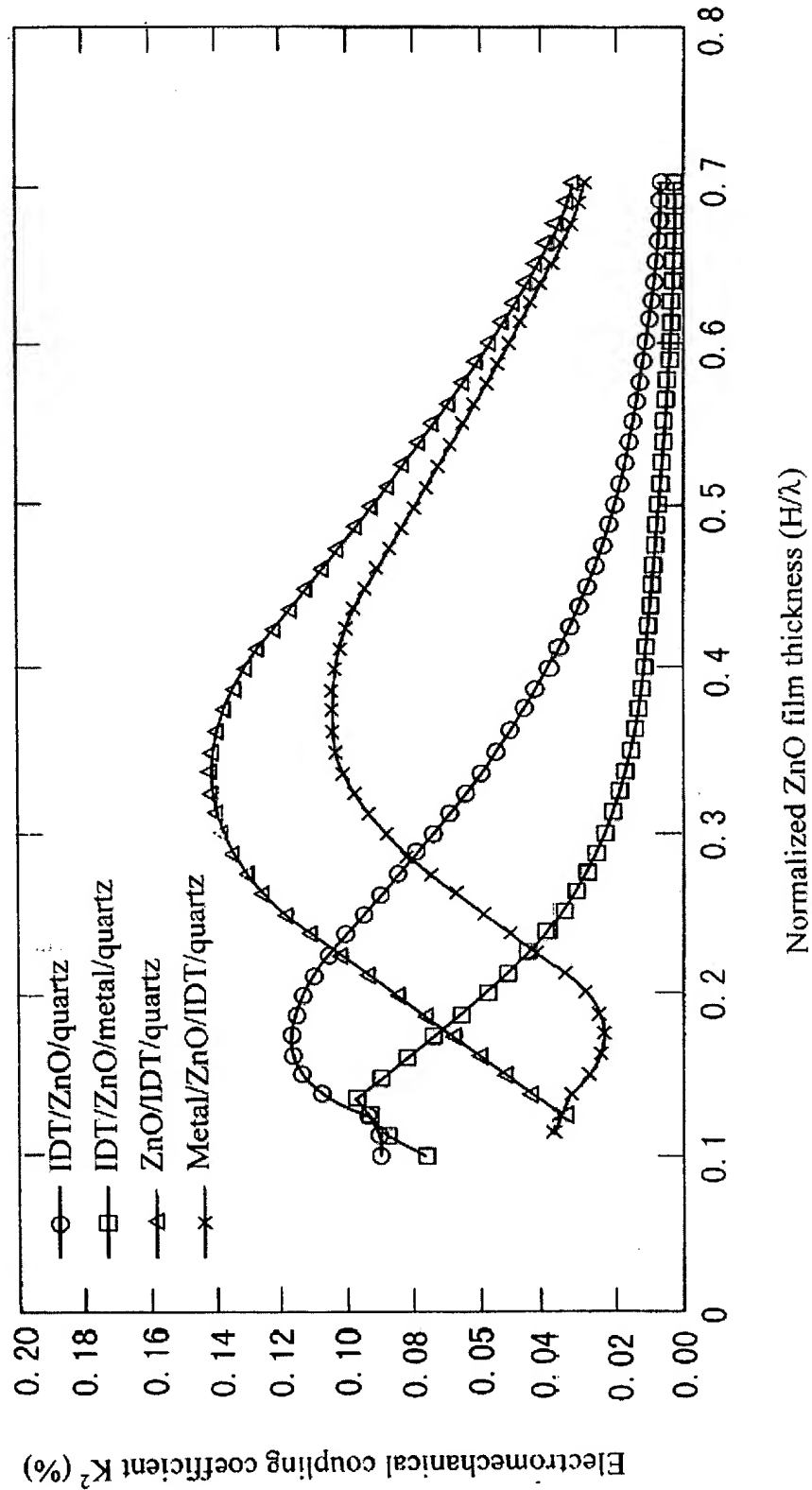


FIG. 6

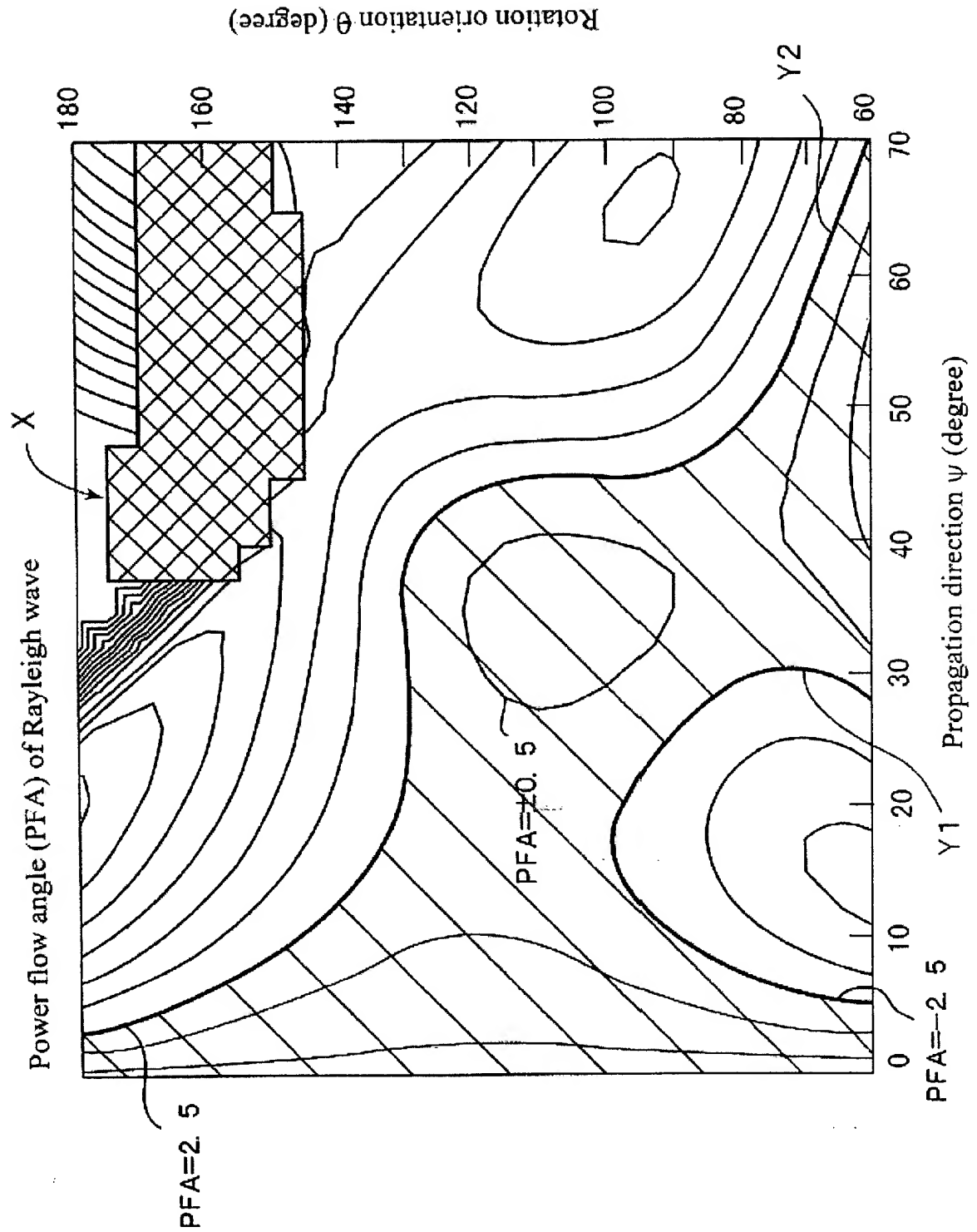


FIG. 7

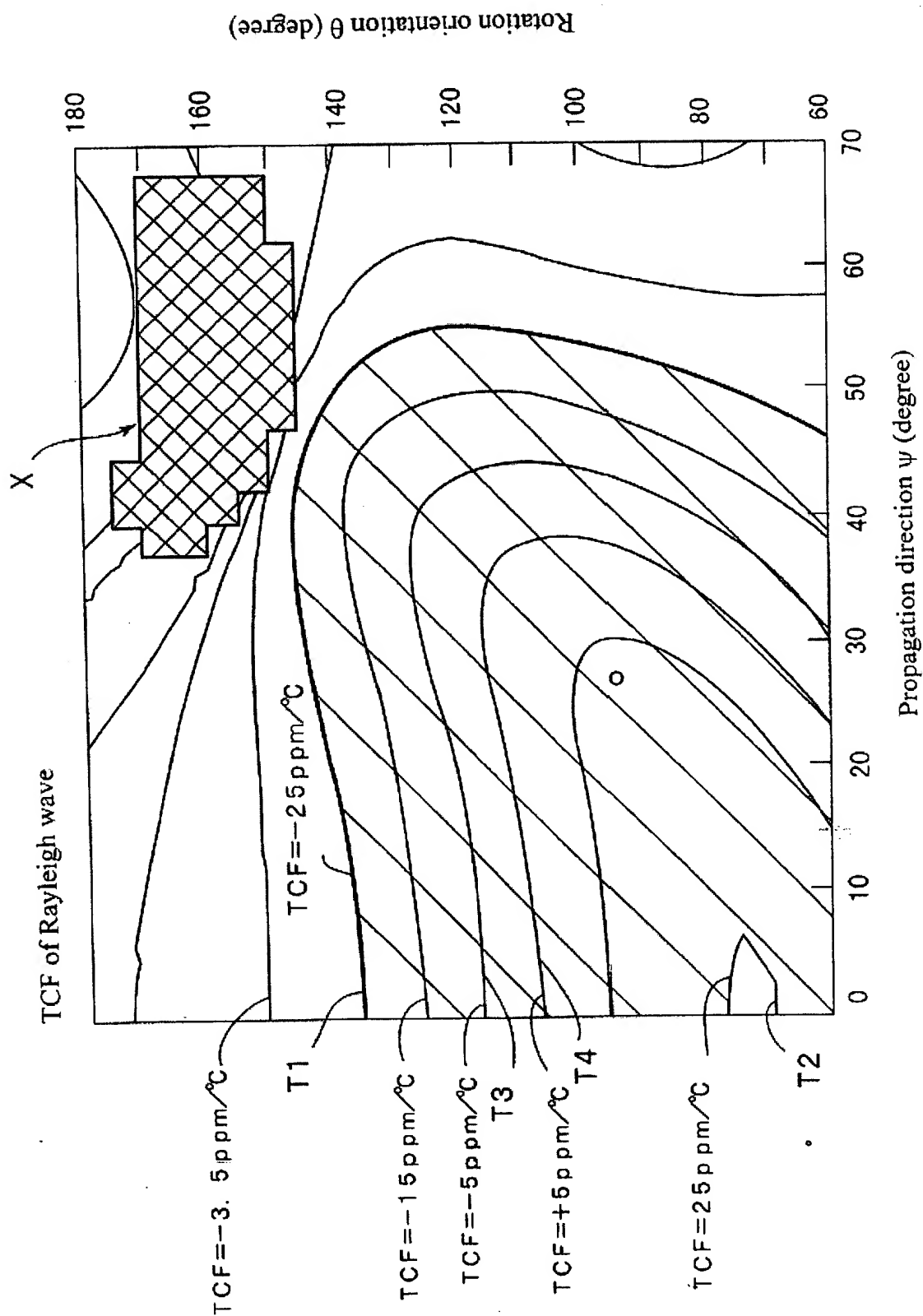
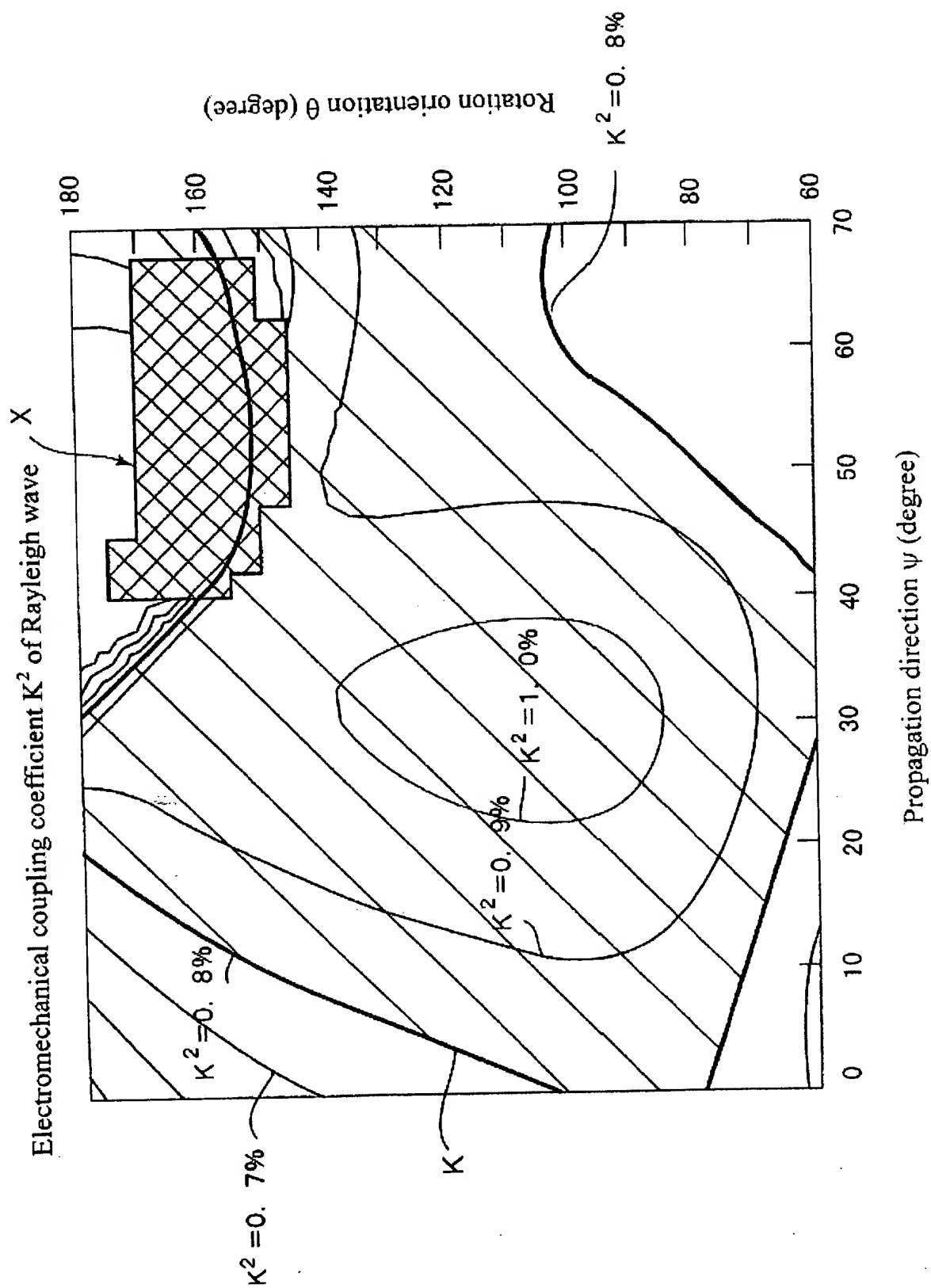


FIG. 8





Electromechanical coupling coefficient  $K_{sp}^2$  of spurious wave (%)

Rotation orientation  $\theta$  (degree)

Contour lines are labeled with values:  $K_{sp}^2 = 0.1$ ,  $K_{sp}^2 = 0.05$ ,  $K_{sp}^2 = 0.15$ ,  $K_{sp}^2 = 0.1$ ,  $K_{sp}^2 = 0.05$ ,  $K_{sp}^2 = 0.15$ .

Regions are labeled: S1, S2, X.

Propagation direction  $\psi$  (degree)



FIG. 10

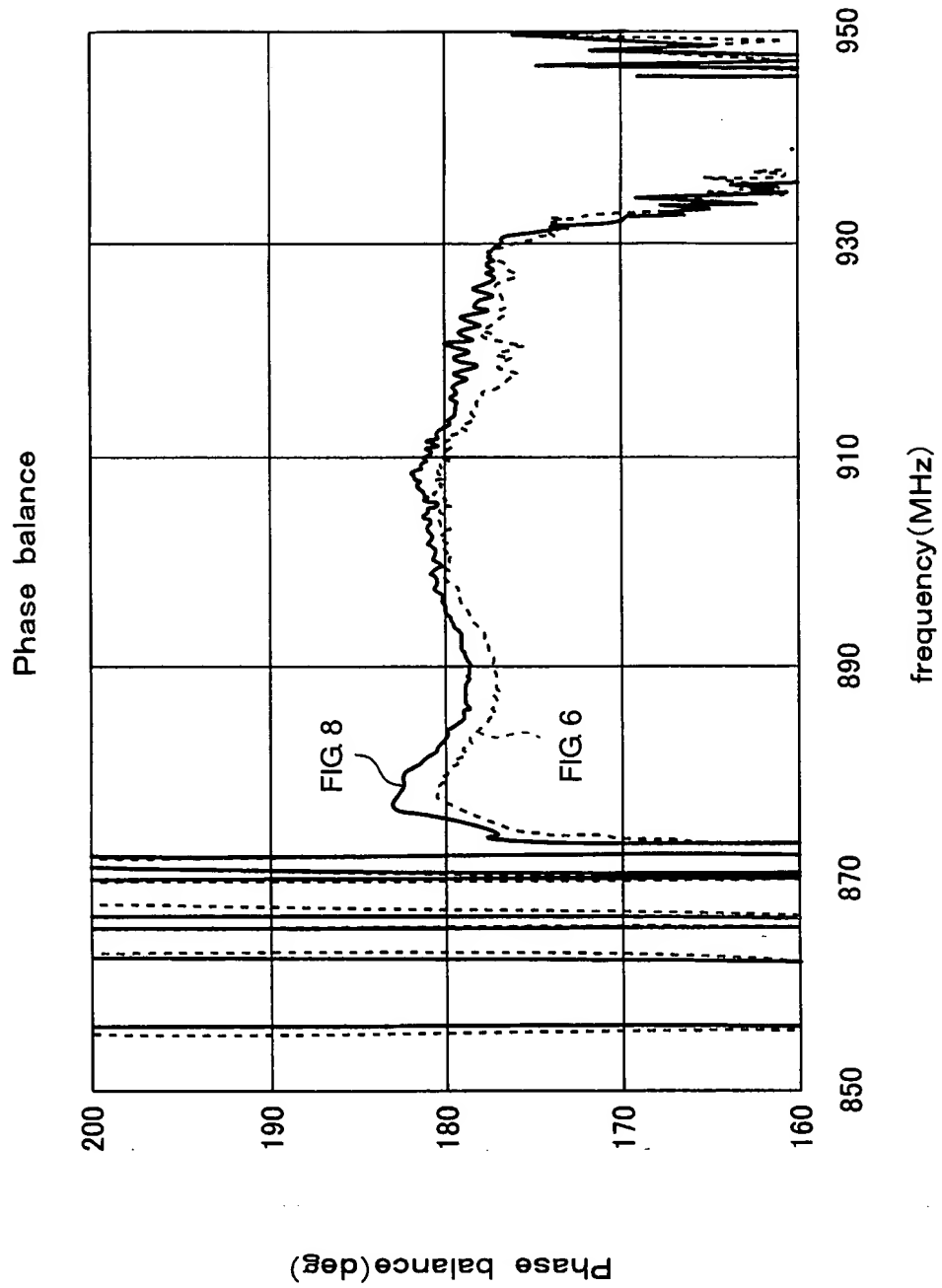




FIG. 11

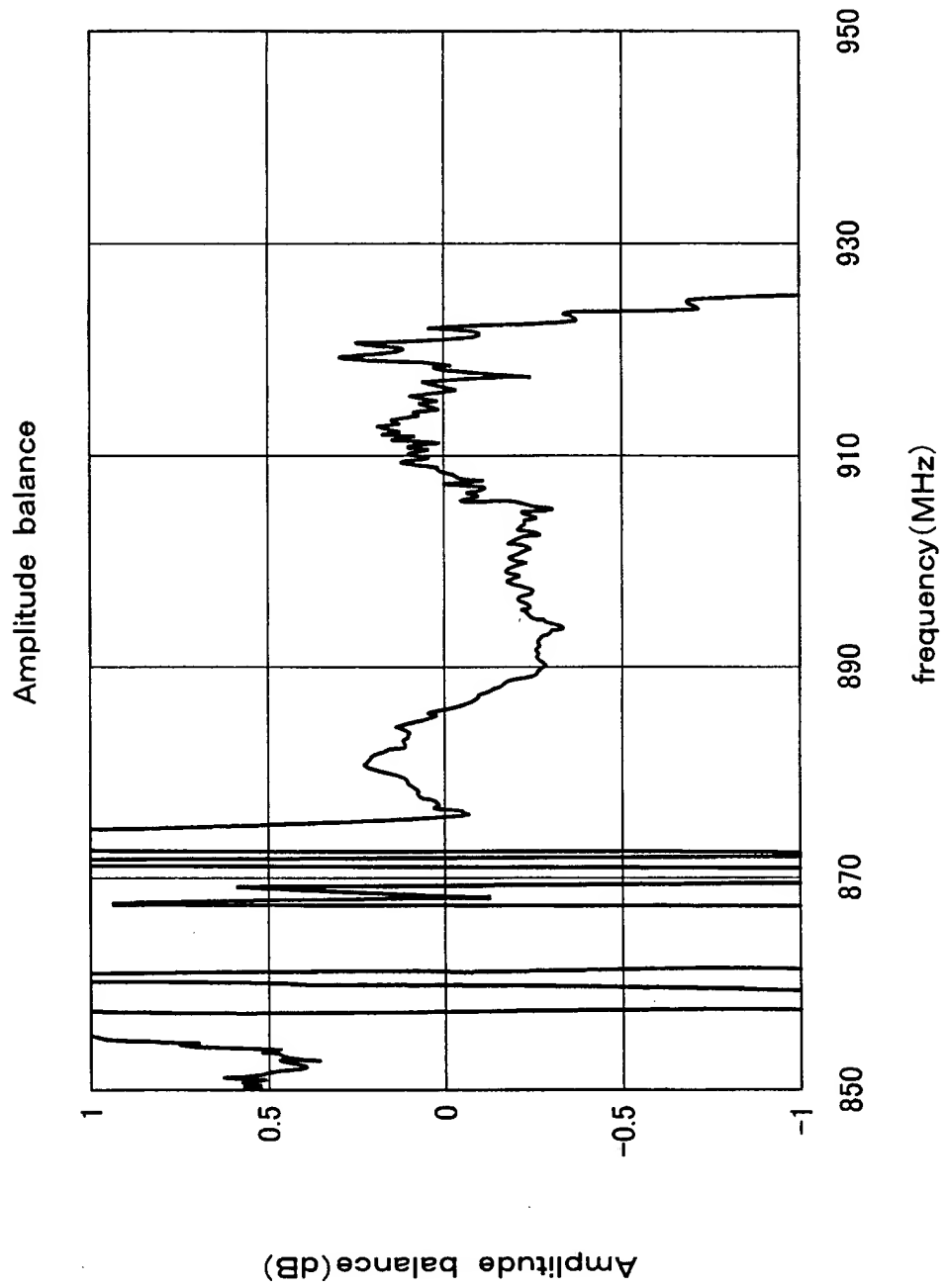




FIG. 12

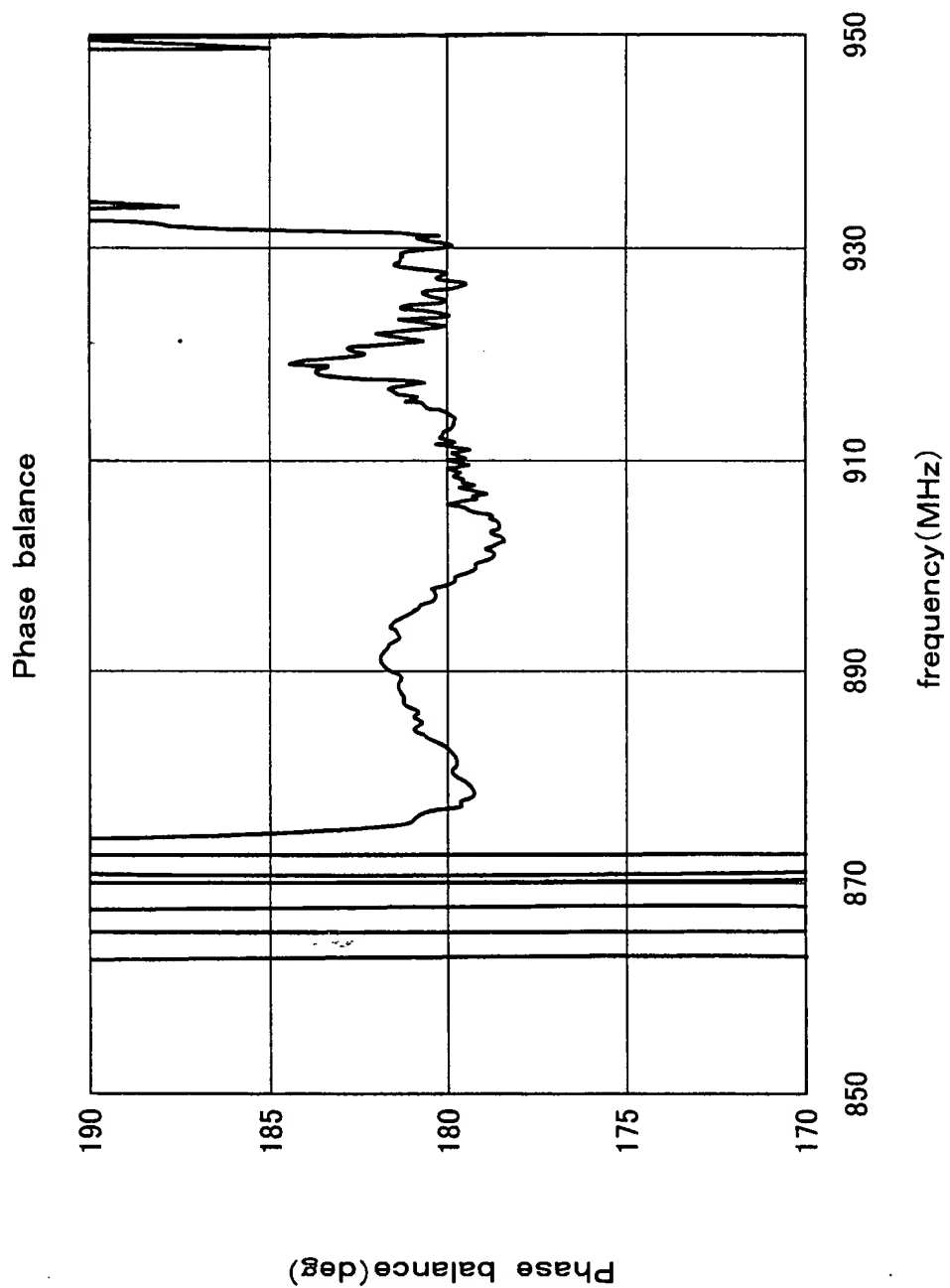


FIG. 13

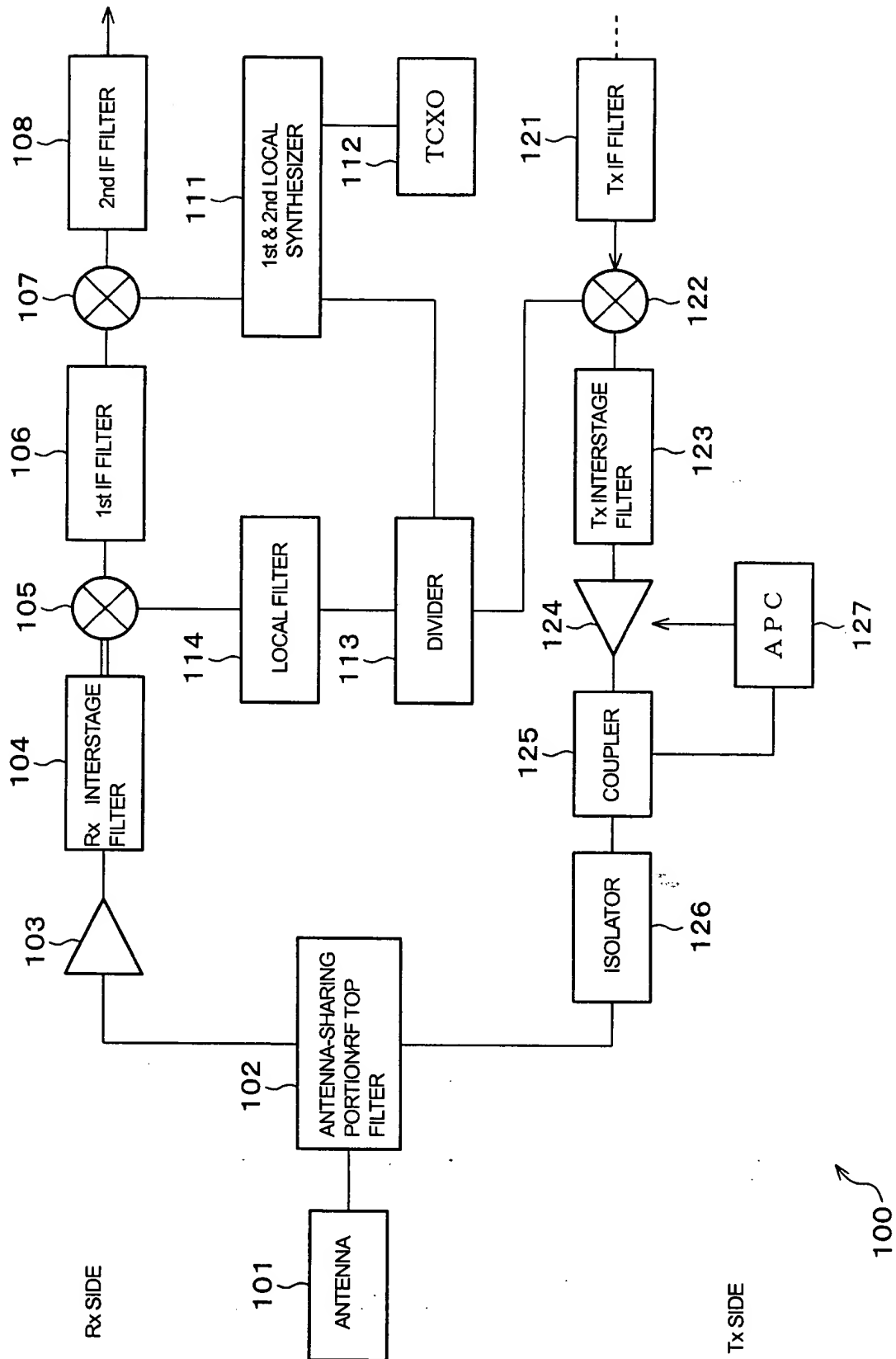


FIG. 14

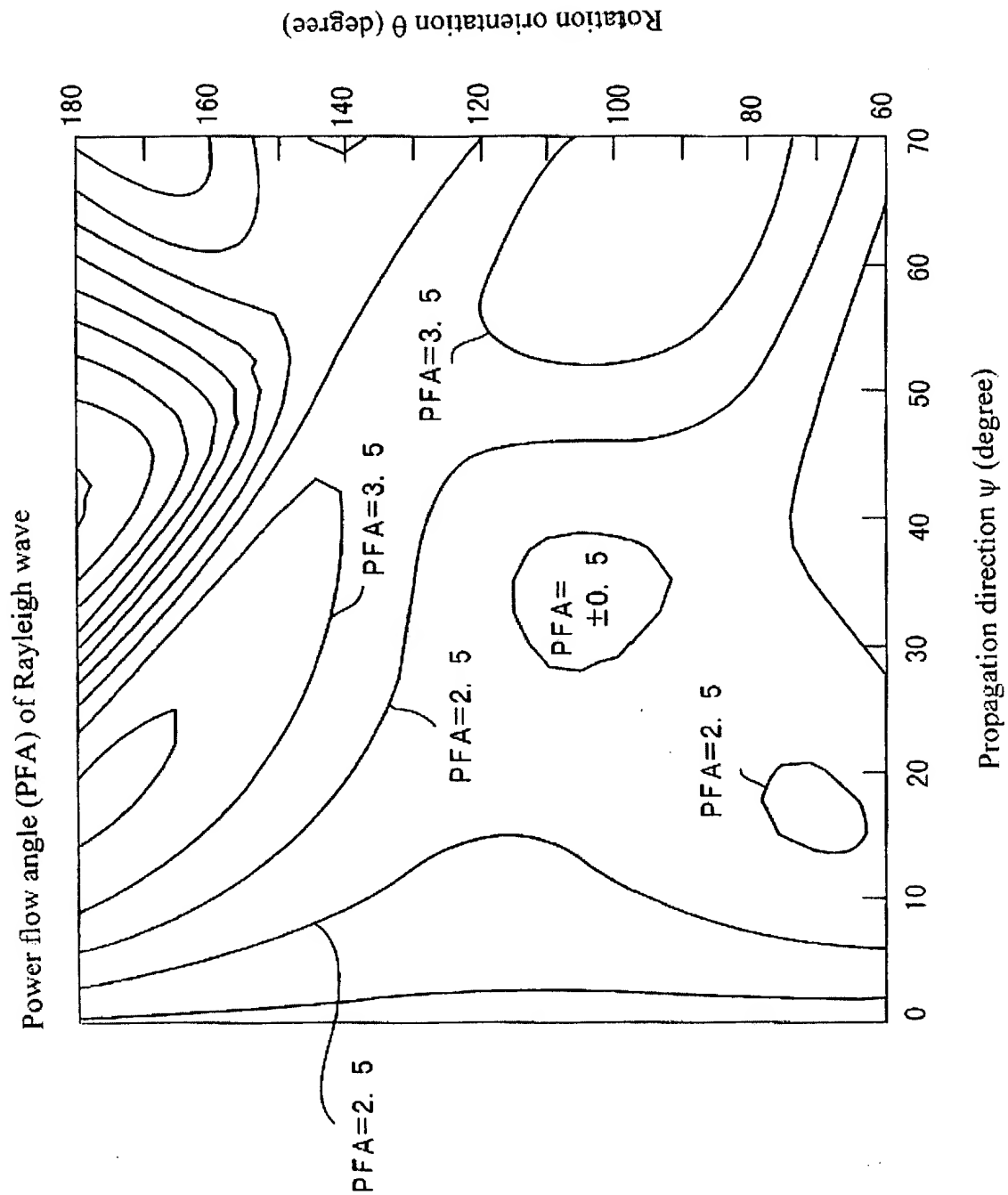


FIG. 15

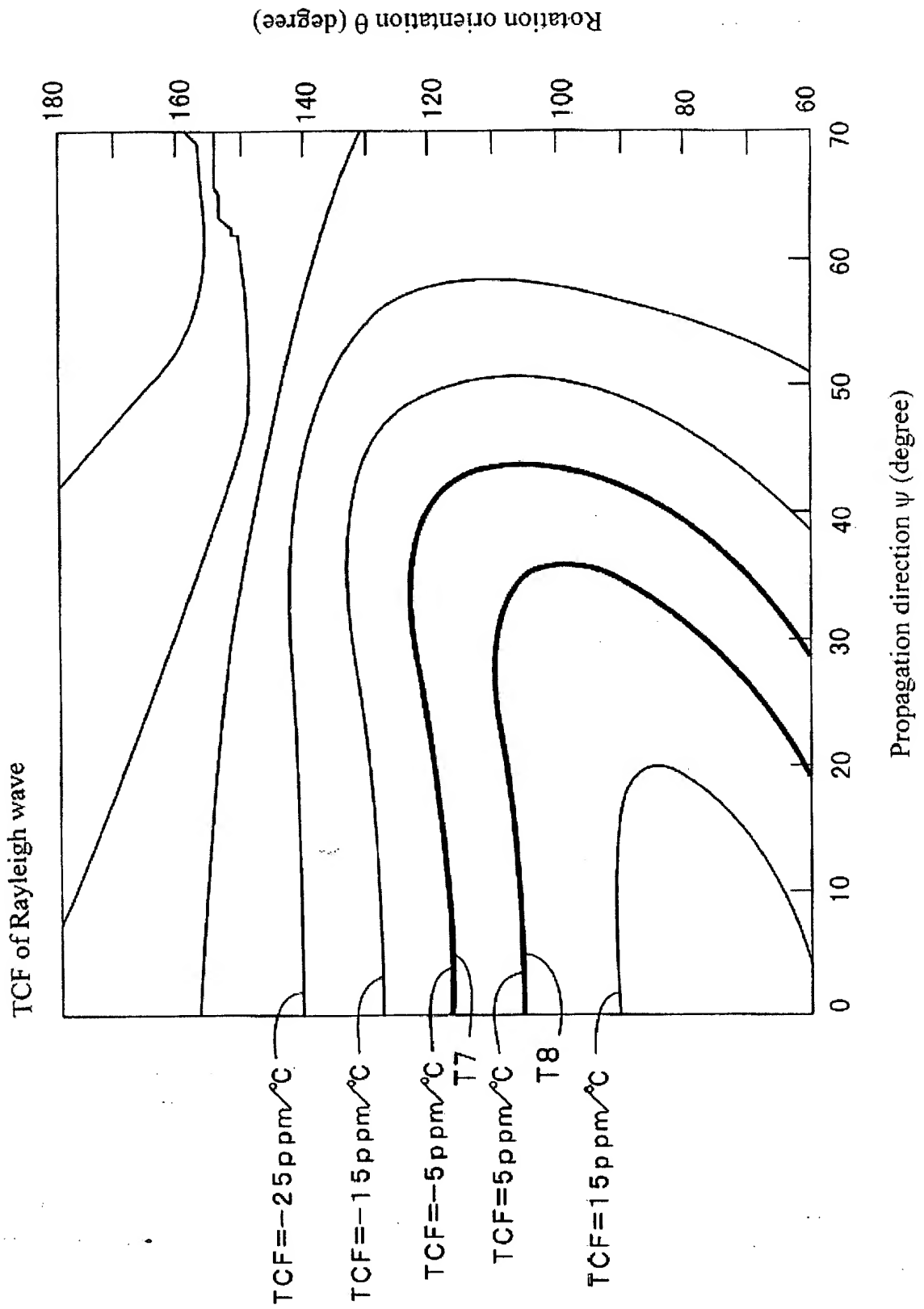
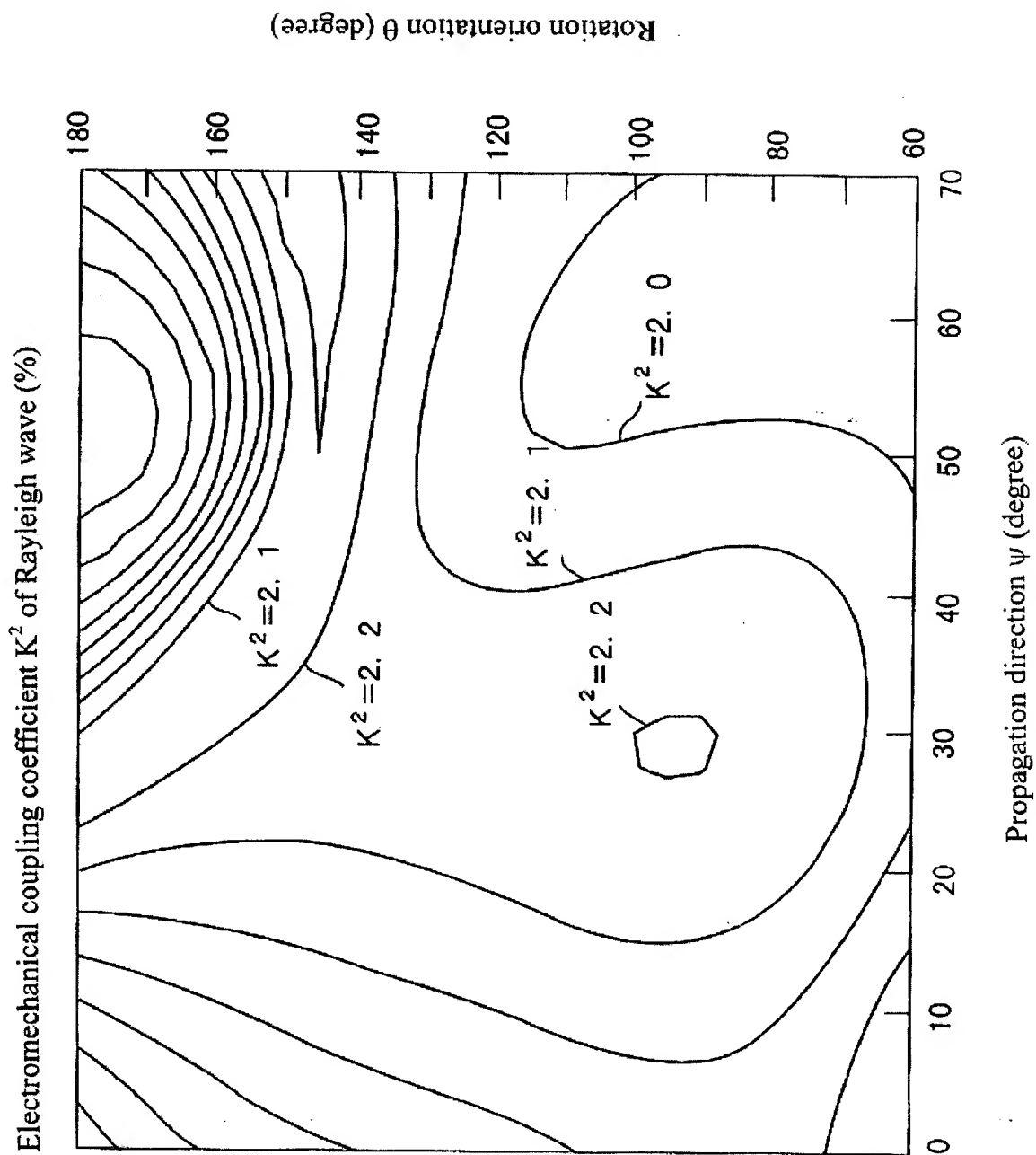


FIG. 16





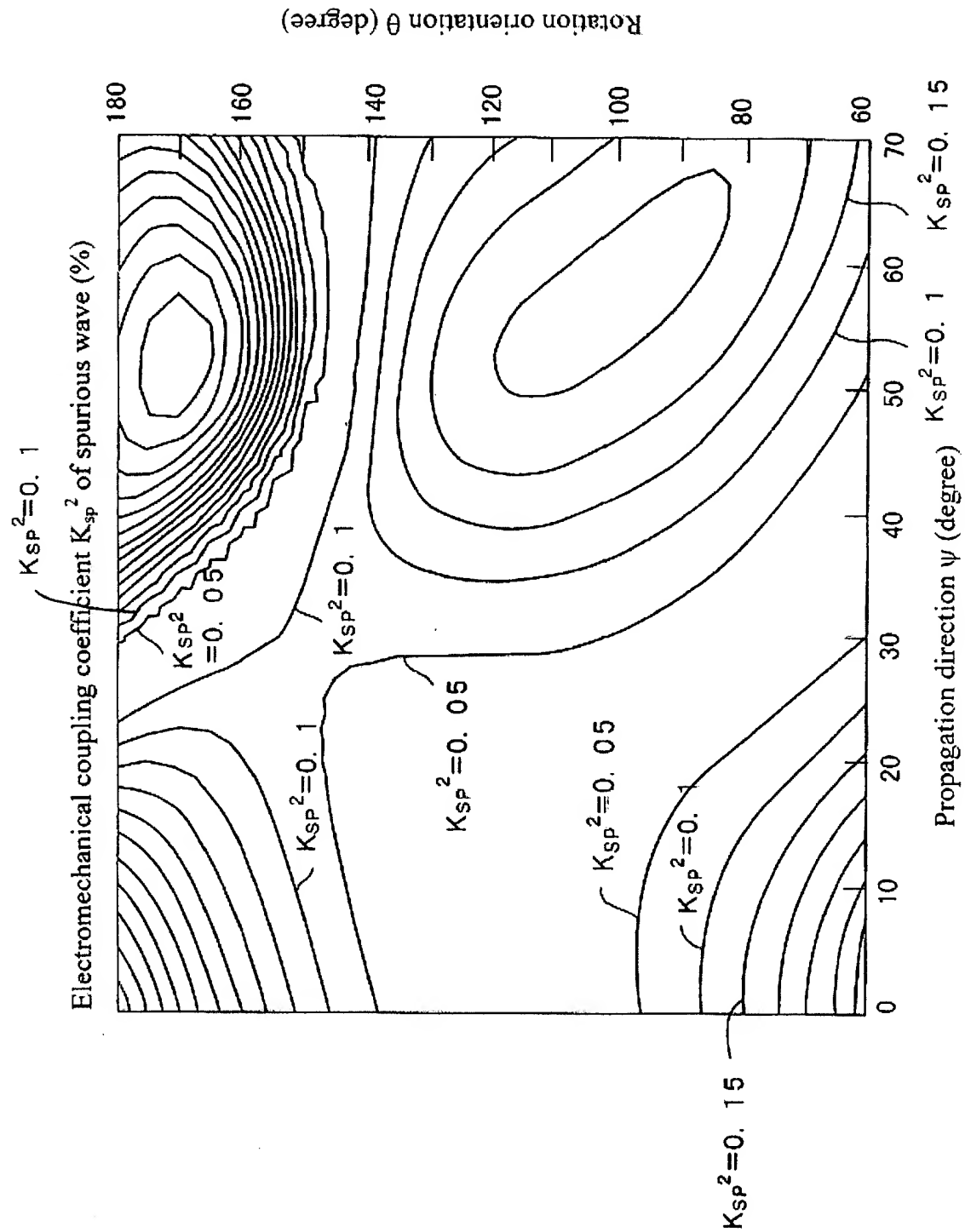


FIG. 18

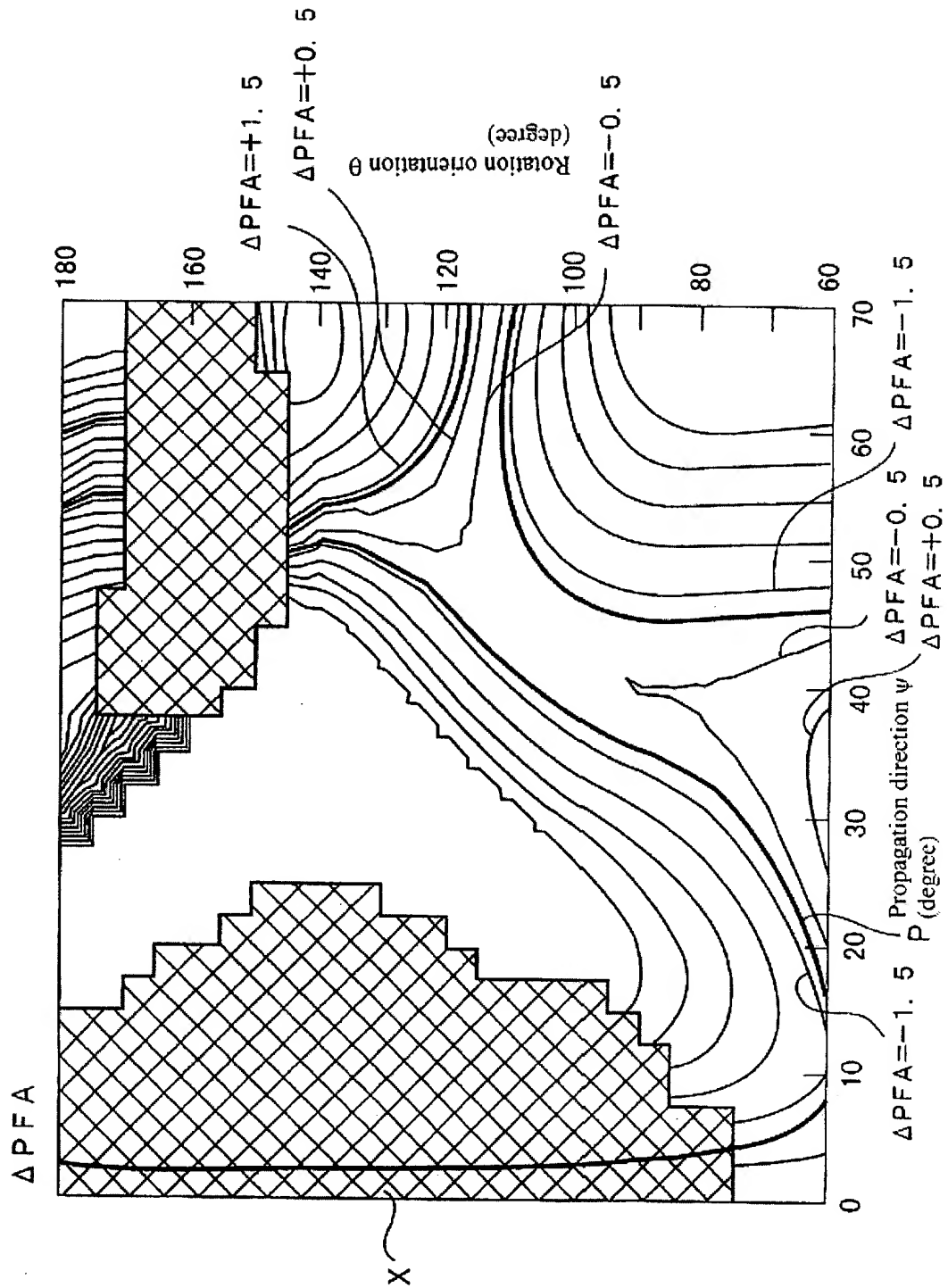


FIG. 19

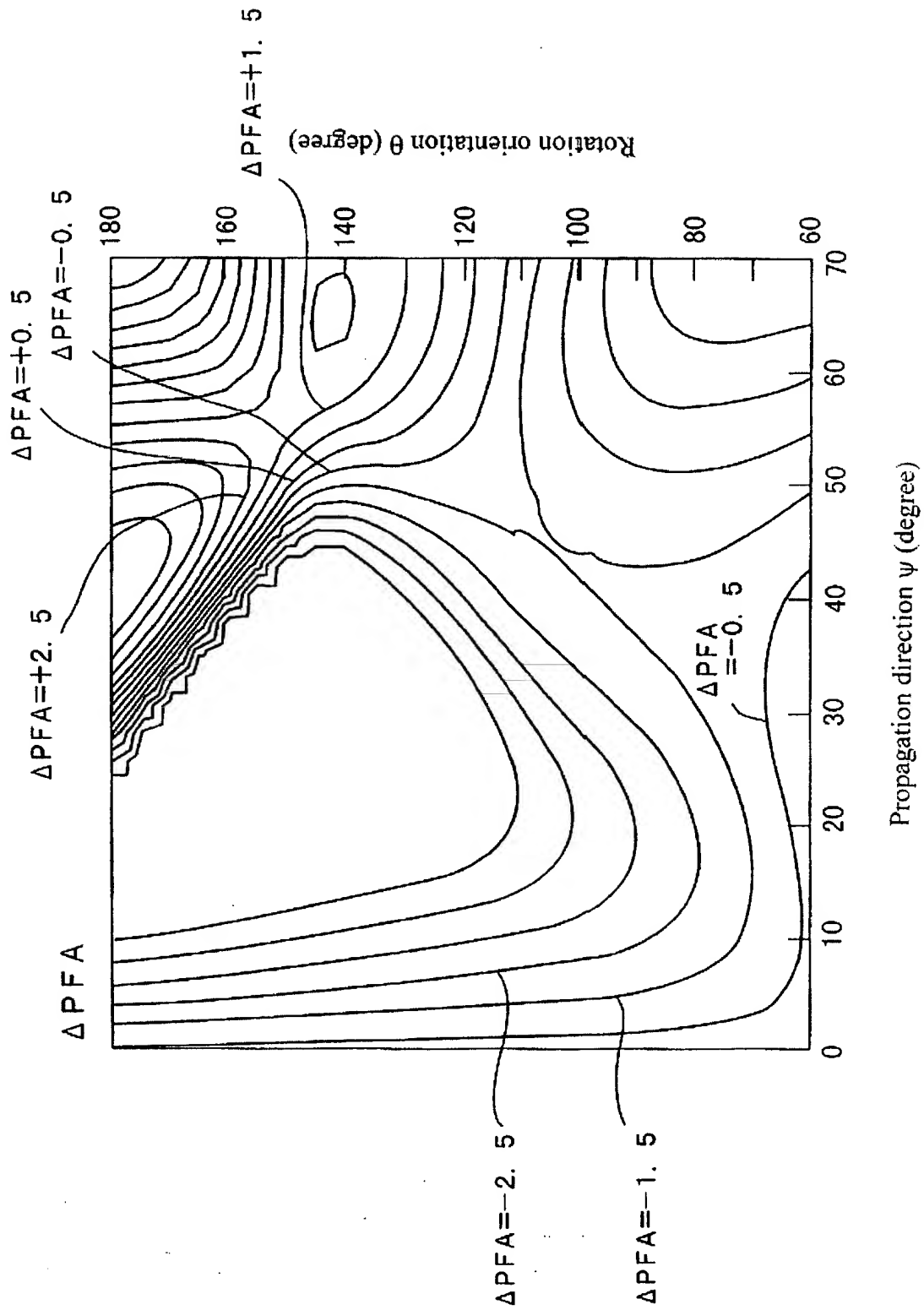


FIG. 20

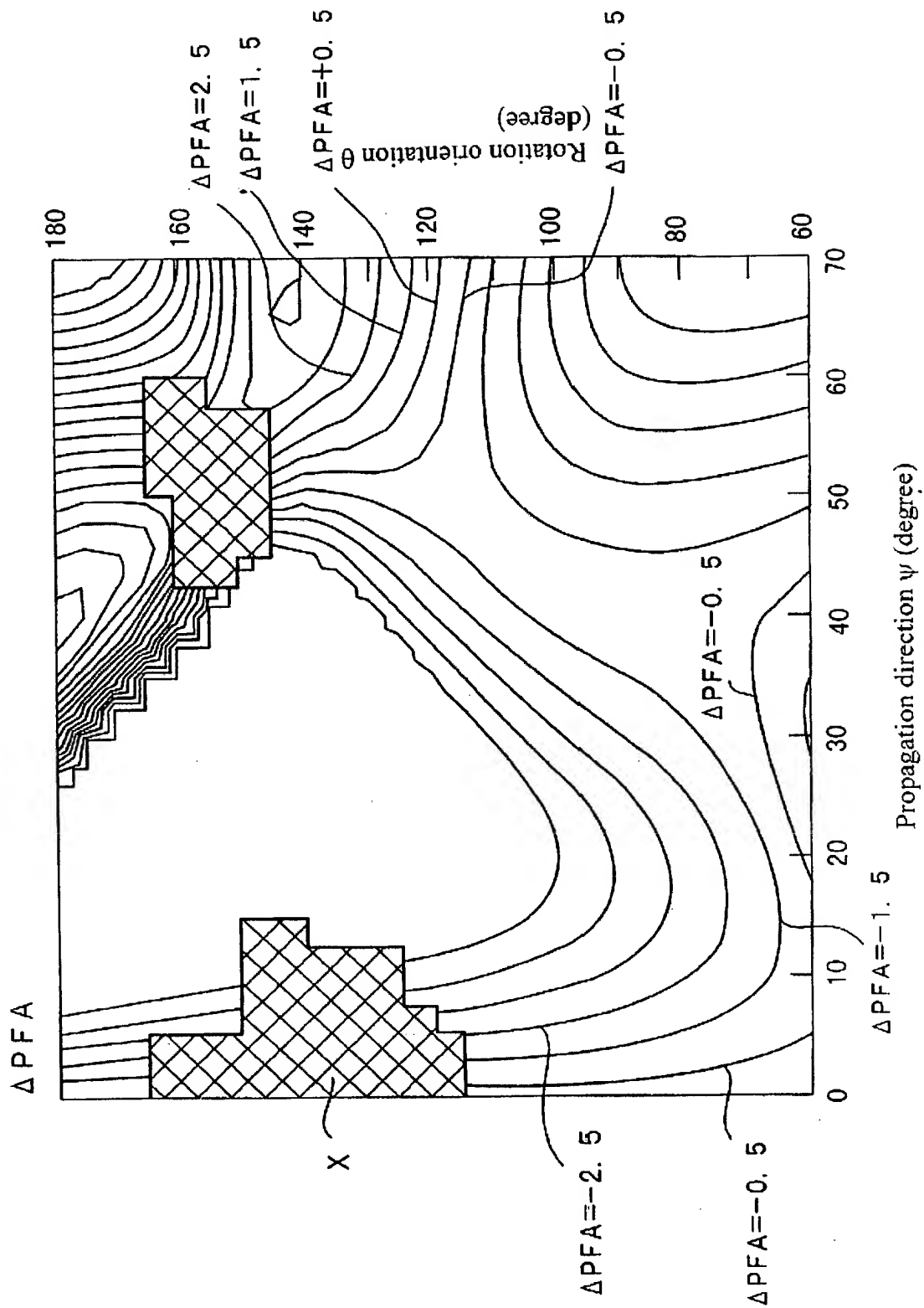
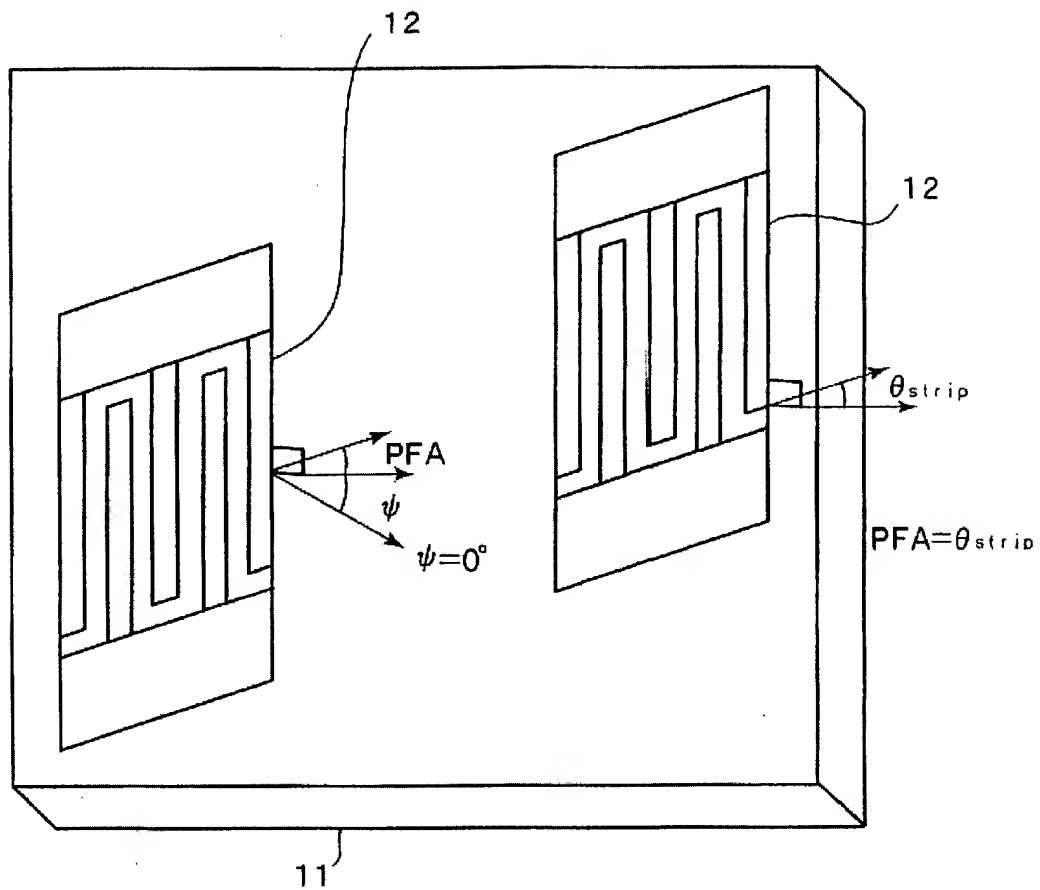


FIG. 21



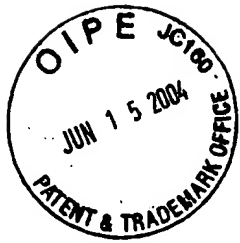


FIG. 22A  
PRIOR ART

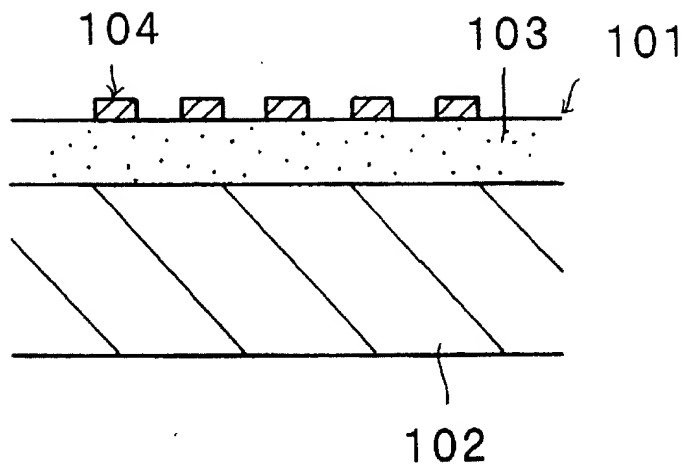


FIG. 22B  
PRIOR ART

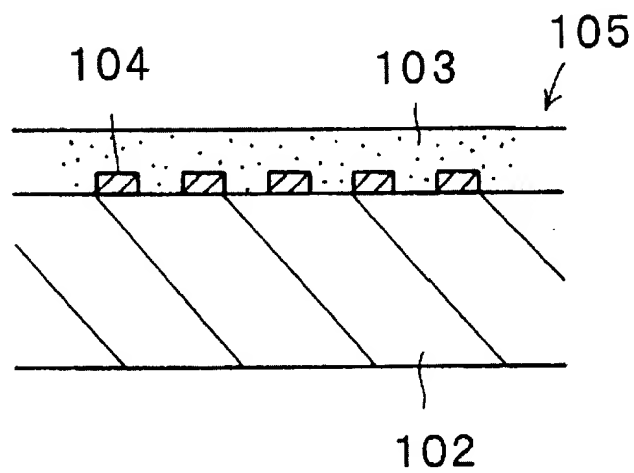




FIG. 23A  
PRIOR ART

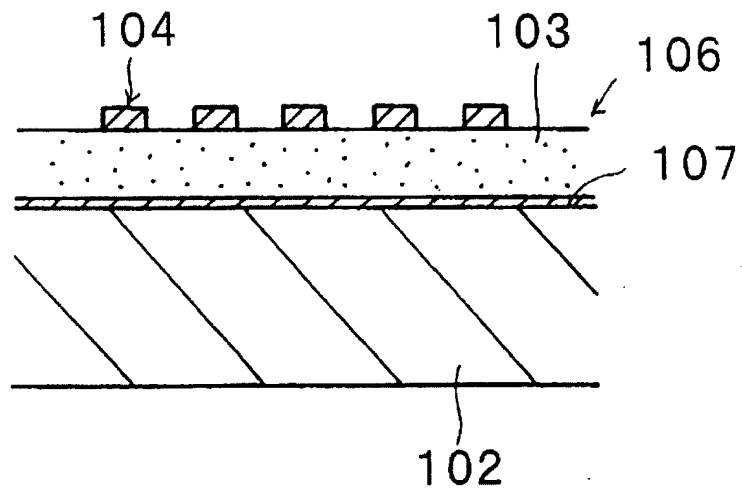
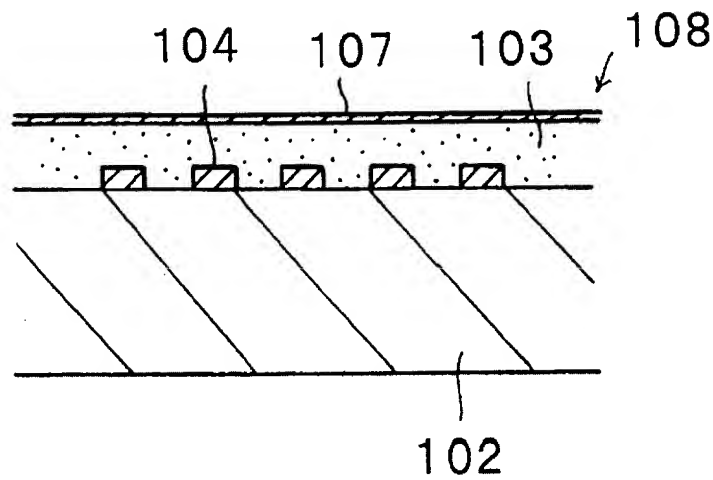
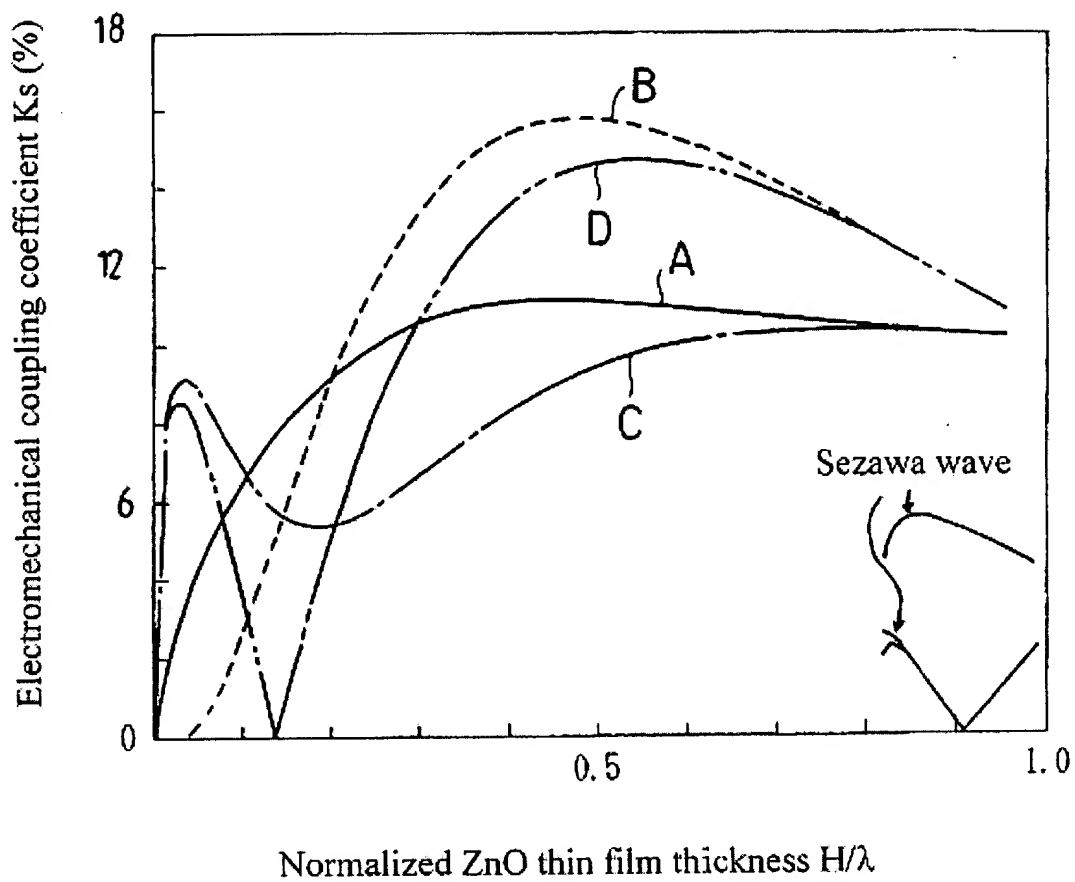


FIG. 23B  
PRIOR ART





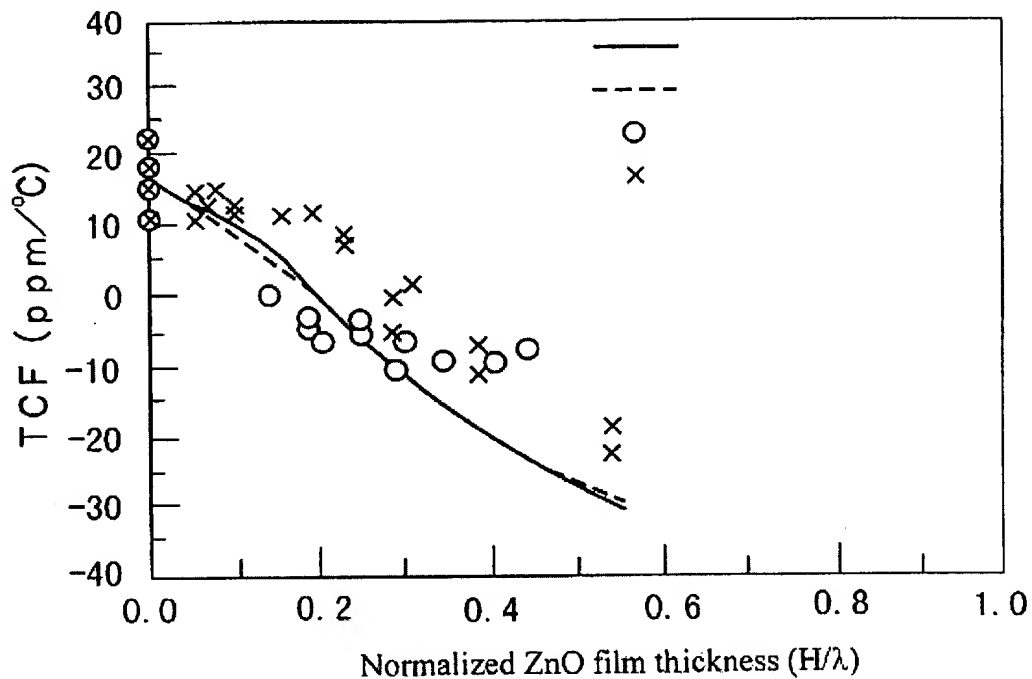
**FIG. 24**  
**PRIOR ART**







**FIG. 25A**  
**PRIOR ART**



**FIG. 25B**  
**PRIOR ART**

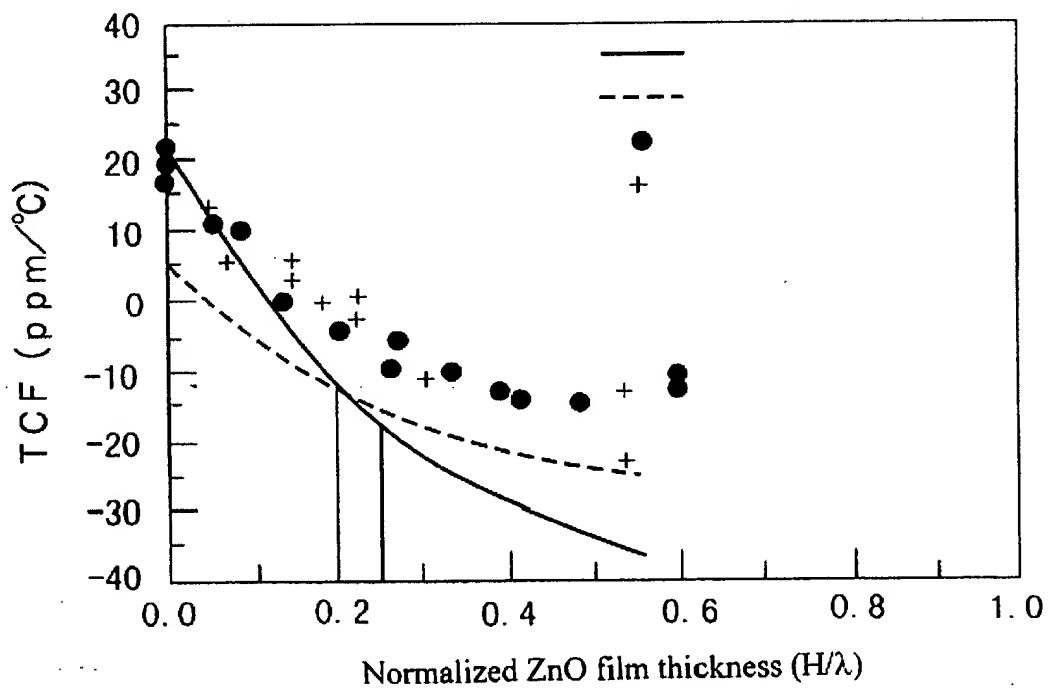




FIG. 26  
PRIOR ART

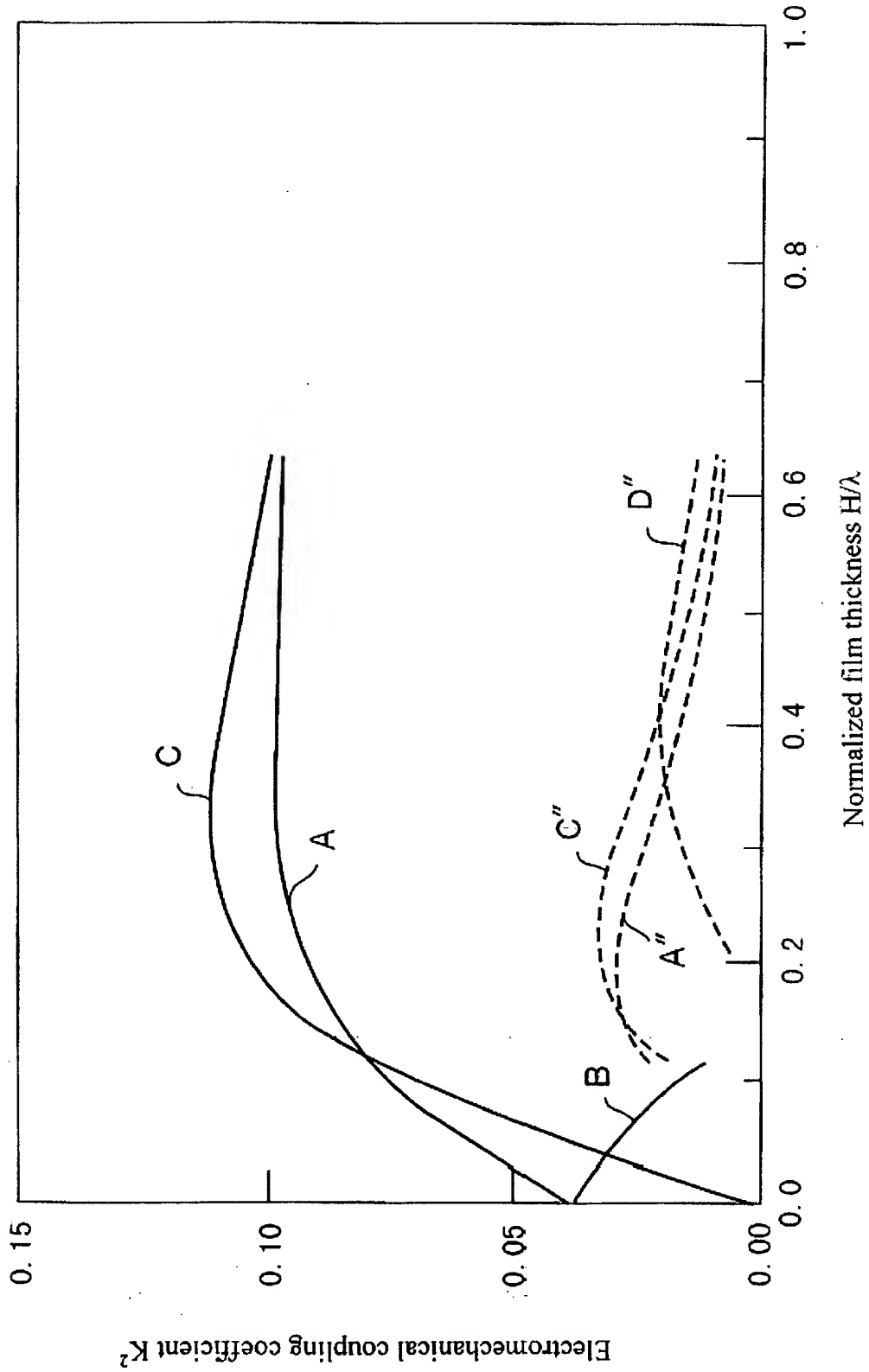


FIG. 27

